

**A**

Turning

**B**

Milling

**C**

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- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

WNHU	L	I.C	S	d
<b>06 04</b>	5.73	9.525	4.704	3.5
<b>08 06</b>	7.76	12.7	6.32	4.4

## Milling inserts

WN** negative insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗									
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗									
	<b>K</b>							⊗	⊗							⊗								
	<b>N</b>							⊗								⊗								
	<b>S</b>			⊗	⊗			⊗	⊗	⊗	⊗	⊗	⊗											
	<b>H</b>																							
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	WNHU060404PNR-GM	0.4				○			○							○								
	WNHU060408PNR-GM	0.8				●			○	○						○								
	WNHU080608PNR-GM	0.8				●		●	●						●									
	WNHU080616PNR-GM	1.6				○			●	○														

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**S P K N 12 04 ED T21K R – DM**

**1 2 3 4 5 6 7 8 9 10**

**A**

Turning

**B**

Milling

**C**












Drilling








**D**


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Insert shape	
A 	C 
H 	L 
M 	O 
P 	R 
S 	T 
W 	X Special
Z Special	















Clearance angle	
B 	C 
D 	E 
F 	N 
P 	









Tolerance class			
			
Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05-0,13	±0,005	±0,025
K	±0,05-0,13	±0,013	±0,025
L	±0,05-0,13	±0,025	±0,025
M	±0,05-0,13	±0,08-0,18	±0,130
N	±0,05-0,13	±0,08-0,18	±0,025
U	±0,08-0,25	±0,13-0,38	±0,130

**1**

**2**

**3**

Fastening features (metric)	
Insert shape	
A 	B 
C 	F 
G 	H 
J 	M 
N 	Q 
R 	T 
U 	W 
X Special	

Cutting edge length l [mm]	
Insert shape	
	
A	C, M
	
H, O, P	L
	
R	S
	
T	W

**4**

**5**

Insert thickness S [mm]			
Code	S	Code	S
00	0,79	05	5,56
T0	0,99	T5	5,95
01	1,59	06	6,35
T1	1,98	T6	6,75
02	2,38	07	7,94
T2	2,58	09	9,52
03	3,18	T9	9,72
T3	3,97	11	11,11
04	4,76	12	12,70
T4	4,96		

**6**

Angle			
Code	Kr	Code	an
A	45°	A	3°
D	60°	B	5°
E	75°	C	7°
F	85°	D	15°
P	90°	E	20°
Z	Special	F	25°
		G	30°
		N	0°
		P	11°
		Z	Special

**7**

Chamfer							
Code	Type	Code	Angle	Code	Width [mm]	Code	Position
F		0	5°	0	0,10	K	
E		1	10°	1	0,15	P	
T		2	15°	2	0,20	W	
S		3	20°	3	0,25	-	
		4	25°	4	0,30		
		5	30°	5	0,35		
				6	0,40		
				7	0,45		

**8**

Cutting direction	
Code	Description
R	Right
L	Left
N	Right and left

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Chip breaker overview  
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## Chip breaker overview

	Finishing	Medium machining	Roughing	
<b>A</b> Turning	DF	DM	DR	
	APF	APM	-	
	PF	PM	PR	
	GF	GM	GR	
	GL	GM	GH	
	-	HGR	-	
	-	-	ZR	
	-	XR	-	
	-	MM	-	
<b>B</b> Milling	MO-2	MO-1	MO-3	
	EF	EM	-	
	APF	APM	-	
	DF	DM	-	
	PF	PM	PR	
	GF	GM	GR	
	GL	GM	GH	
	-	HGR	-	
	E	E	-	
<b>C</b> Drilling	-	-	ZR	
	-	XR	-	
	-	MM	-	
	CF	CM	CR	
	DF	DM	DR	
	EDFR	DER	DER	
	PF	PM	PR	
	GF	GM	GR	
	GL	GM	GH	
<b>D</b> Technical Information	-	-	ZR	
	-	XR	-	
	MO-2	MO-1	MO-3	
	EF	EM	-	
	NM	NM	-	
	<b>E</b> Index	LH	LH	LH
		ALH	ALH	ALH

**Coated cemented carbide CVD**

Grade	ISO	Micro structure	Grade description
<b>YBC302</b>	P20 - P35		CVD coated P20-P35 carbide grade for medium operation to roughing of steel at higher cutting speed. Optimal performance of wear resistance and toughness for a wide application field.
<b>YBC301</b>	P20 - P35		CVD coated P20-P35 carbide grade for medium operation to roughing of steel at lower cutting speed.
<b>YBC401</b>	P30 - P50 M30 - M40		CVD coated P30-P50/M30-M40 carbide grade for roughing operation of steel at lower cutting speed and unstable condition.
<b>YBM251</b>	P20 - P30 M15 - M35		CVD coated P20-P30/M15-M35 carbide grade for medium to roughing operation in stainless steel and steel with wide application field. Good wear resistance and capability against plastic deformation at normal cutting speed.
<b>YBM253</b>	M15 - M35		CVD coated M15-M35 carbide grade for medium to roughing operation in stainless steel with wide application field. High wear resistance and capability against plastic deformation at higher cutting speed.
<b>YBM351</b>	P25 - P40 M20 - M40		CVD coated P25-P40/M25-M40 carbide grade for roughing operation in stainless steel and steel. Good wear resistance and edge stability at normal cutting speed.
<b>YBD152</b>	K10 - K25		CVD coated K10-K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Good wear resistance and toughness at higher cutting speed.
<b>YBD252</b>	K20 - K35		CVD coated K20-K35 carbide substrate. Optimized for medium to roughing operation of cast iron and Steel. Good wear resistance and toughness at higher cutting speed.

**A**

Turning

**B**

Milling

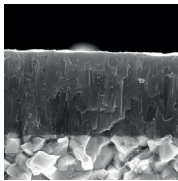
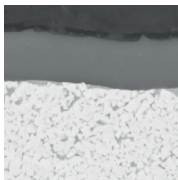
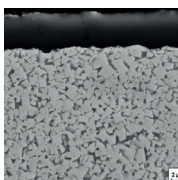
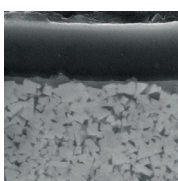
**C**

Drilling

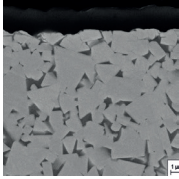
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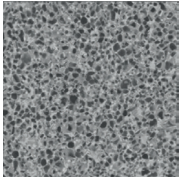
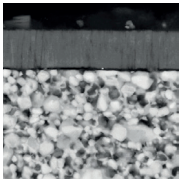
## Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
A Turning	YBG101	N05–N20	 <p>PVD coated N05–N20 carbide substrate for finishing to semi-finishing in aluminium materials. Coating only on the top face, in combination with the aluminium chip breakers, prevents built-up edges and gives a smooth cut.</p>
B Milling	YBG202	P10 - P30 M10-M25	 <p>PVD coated P10–P30/M10–M25 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.</p>
D Technical Information	YBS203	S15 – S25	 <p>Turning and milling grades for processing heat-resistant materials. A special carbon substrate and the latest PVD coating technology enable a very good wear behaviour, high fracture toughness and high thermal stability.</p>
YBG302	P15 - P30 M25 - M40	 <p>PVD multilayer coated P10–P30/M10–M25 carbide substrate for finishing to medium machining of stainless steel, super alloys and steel (grooving/milling). Optimised coating stability for higher wear resistance and thermal stability in a wide range of applications.</p>	
			YBG302

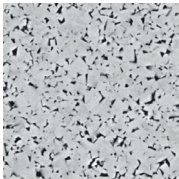
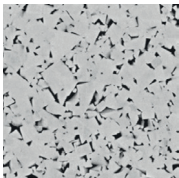
**Coated cemented carbide PVD**

Grade	ISO	Micro structure	Grade description
<b>YBS303</b>	S25 - S35		Milling grade for machining titanium alloys. A tough carbide substrate and the latest PVD coating technology with increased impact resistance and high thermal stability.

**Cermet**

Grade	ISO	Micro structure	Grade description
<b>YNG151</b>	P05 - P15		Uncoated P05-P15 cermet grade for fine finishing operation of steel and stainless steel. Good resistance against plastic deformation for good surface finishing.
<b>YNG151C</b>	P05 - P15		PVD coated P05-P15 cermet grade for fine finishing operation of steel and stainless steel. Good wear resistance and capability against plastic deformation for good surface roughness.

**Uncoated cemented carbide**

Grade	ISO	Micro structure	Grade description
<b>YD101</b>	N05 - N25 K05 - K20		Uncoated K05-K20/N05-N20 carbide substrate for fine to medium application in aluminum and other material.
<b>YD201</b>	K10 - K30 N10 - N30		Uncoated K10-K30/N10-N30 carbide substrate for medium application in aluminum and other material.

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## Application fields of grades – indexable milling

	ISO	HC <sup>1</sup> (CVD)	HC <sup>1</sup> (PVD)	HT	HC <sup>2</sup>	HW	PCBN/PCD	
A Turning	P	P01						
		P10		YBG102				
		P20	YBC301	YBG202	YNG151	YNG151C		
		P30	YBC302	YBG205				
		P40	YBC401	YBG302			YC305	
		YBM351	YB9320					
		YBM253						
B Milling	M	M01						
		M10		YBG102				
		M20	YBM251	YBG202	YNG151	YNG151C		
		M30	YBM253	YBG205				
		M40	YBM351	YBG302			YC305	
		YBC401	YB9320					
C Drilling	K	K01						
		K10		YBG102				
		K20	YBD152	YBG152				
		K30	YBD252	YBG202				
		K40					YD201	
D Technical Information	N	N01				YD051		
		N10		YBG101			YD101	
		N20		YBG202				YD201
		N30						
E Index	S	S01		YBG102				
		S10		YBG202				
		S20		YBG205				
		S30		YBS203				
				YBS303				
F	H	H01						
		H10		YBG102				
		H20						
		H30						

<b>P</b>	Steel
<b>M</b>	Stainless steel
<b>K</b>	Cast iron

<b>N</b>	Non-ferrous metals
<b>S</b>	Heat-resistant alloys
<b>H</b>	Hardened materials

HC <sup>1</sup>	Coated carbide
HT	Uncoated cermet
HC <sup>2</sup>	Coated carbide
HW	Uncoated carbide